

Ergonomic Evaluation Types

Conducting an ergonomic assessment requires a blend of expertise and intuition. Choosing the right approach involves considering variables like task complexity, diverse risks, and the need for tailored solutions. Integrating qualitative and quantitative data and staying updated on best practices are crucial.

Let's explore the different types of assessments you can automate with TuMeke, and why this fusion of science and artistry is essential for effective ergonomic evaluation and intervention.

INCLUDING:

- 1 REBA (Rapid Entire Body Assessment)
- 2 RULA (Rapid Upper Limb Assessment)
- 3 NIOSH (National Institute for Occupational Safety and Health) Lifting Equation
- 4 Revised Hand Strain Index (RHSI)
- 5 Snook Tables (aka Liberty Mutual Tables)



REBA (Rapid Entire Body Assessment)

- + **Purpose:** REBA is used to assess the risk of musculoskeletal disorders (MSDs) associated with various tasks by analyzing the entire body posture and movement.
- + **When to use:** REBA is best used when evaluating tasks that involve dynamic movements and postures, such as lifting, bending, reaching, and pushing/pulling.

EXAMPLE

Imagine a worker in a manufacturing plant working on an assembly line. The task involves repetitive hand movements, bending, and reaching. By using REBA, you can assess both the worker's posture during these movements and the overall stress on the body. You might find that certain postures, such as prolonged bending or twisting, increase the risk of musculoskeletal strain.

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RULA (Rapid Upper Limb Assessment)

- + **Purpose:** RULA focuses specifically on the upper limbs (arms, neck, and trunk) to evaluate the risk of MSDs resulting from repetitive tasks or prolonged static postures.
- + **When to use:** RULA is suitable for tasks that primarily involve repetitive motions or sustained static positions, such as assembly line work or computer tasks involving keyboard/mouse usage.

EXAMPLE

Consider a factory worker who spends extended periods operating heavy machinery or performing repetitive tasks on an assembly line. RULA can be utilized to assess the worker's posture while engaged in these activities. It may reveal that the positioning of the machinery or the assembly line setup leads to strained wrist and arm postures, heightening the risk of repetitive strain injuries such as tendonitis.

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NIOSH (National Institute for Occupational Safety and Health) Lifting Equation

- + **Purpose:** NIOSH lifting equation is used to assess the risk of back injuries related to manual lifting tasks by considering various factors such as weight lifted, distance, frequency, and posture.
- + **When to use:** Applicable when evaluating manual lifting tasks in workplaces such as warehouses, construction sites, or any setting where manual material handling is involved.

EXAMPLE

In a warehouse setting, workers are tasked with manually lifting heavy boxes onto shelves. You can apply the NIOSH lifting equation to analyze the lifting technique, weight of the boxes, distance lifted, and frequency of lifts. You may discover that certain lifting tasks exceed recommended weight limits or involve awkward postures, putting workers at risk of back injuries.

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Revised Hand Strain Index (RHSI)

- + **Purpose:** RHSI is designed to evaluate the risk of hand/wrist injuries associated with repetitive manual tasks, such as gripping, twisting, and grasping.
- + **When to use:** RHSI is most appropriate for tasks involving repetitive hand and wrist movements, such as assembly work, typing, or using hand tools.

EXAMPLE

Picture a factory worker using hand tools to assemble intricate electronic components. You can use RHSI to evaluate the repetitive hand movements and grip force required for the task. You may find that the design of the hand tools or the force needed to manipulate them could lead to hand/wrist strain over time if not addressed.



Snook Tables (aka Liberty Mutual Tables)

- + **Purpose:** Snook Tables provide guidelines for assessing the risk of overexertion injuries (e.g., lifting, lowering, carrying, pushing, pulling) based on parameters such as frequency, duration, and weight.
- + **When to use:** Snook Tables are useful for evaluating a wide range of manual tasks involving exertion, across different industries.

EXAMPLE

Imagine a shipping warehouse worker pushing heavy pallet jacks or carts throughout their shifts. You can utilize the Snook Tables to evaluate the risk of overexertion injuries associated with these activities. By analyzing factors such as the weight of the load, frequency of pushing, and duration of tasks, you can pinpoint high-risk scenarios and devise interventions to mitigate the potential for injuries.